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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,058	03/28/2001	Yun-Ting Lin	US010117	3081

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P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

KIM, CHONG R

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 11/28/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,058

Applicant(s)

LIN, YUN-TING

Examiner

Charles Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to due to grammatical errors. The phrase “screen and a wherein” in lines 4-5 is grammatically incorrect. The Examiner suggests deleting “a” before “wherein”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "wherein the encoded first set of higher resolution data" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. It appears that the applicant intended the phrase to read "wherein the encoded first set of higher video resolution data". Appropriate correction is required.

Referring to claim 8, the phrase “wherein the encoded first set of higher resolution data is decoded in the remote video decoder and provided to a first set of higher video resolution data to a first region of the display screen” renders the claim indefinite because it is unclear if the “first set of higher resolution data” in line 2 is the same as the “first set of higher video resolution

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data” in lines 3-4. It appears that the applicant intended the phrase to read “wherein the encoded first set of higher video resolution data is decoded in the remote video decoder and provided to a first region of the display screen”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-5, 7, 8, 10-12, 14-15, 17-18, 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by the article entitled “A real-time foveated multiresolution system for low-bandwidth video communication” by Geisler et al. (“Geisler”).

Referring to claim 1, Geisler discloses an apparatus comprising:

- a. an eye tracking system for determining an eye-gaze direction line of a user looking at a display screen of a display device (page 2, section 2 labeled “SYSTEM OVERVIEW”, and figure 1. Note that the pointing device is the eye tracker)
- b. an eye-gaze tracking module for extracting the eye-gaze direction from the eye tracking system and for determining an intersection point where the eye-gaze direction line intersects with the display screen (page 2, section 2 labeled “SYSTEM OVERVIEW”, and figure 1. Note that the “coordinates of the foveation point” is interpreted as the intersection point where the eye-gaze direction line intersects with the display screen)

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c. wherein the eye-gaze tracking module sends the intersection point data to a scalable video decoder (page 2, section 2 labeled “SYSTEM OVERVIEW”, and figure 1. Note that the unit labeled “DISPLAY” in figure 1 is the scalable video decoder)

d. wherein the scalable video decoder receives an encoded video stream and provides a first set of higher video resolution data to a first region surrounding the intersection point on the display screen and a second set of lower video resolution data to a second region of the video screen (pages 2-3, section 2 labeled “SYSTEM OVERVIEW”, figure 1, and page 4, section 3).

Referring to claim 3, Geisler further discloses that the encoded video stream comprises graphics (page 2 and figure 6).

Referring to claim 4, Geisler further discloses that the second region on the video screen includes a plurality of regions with differing video resolutions (page 4, section 3, and figure 3).

Referring to claim 5, Geisler further discloses that the eye tracking system includes an eye pupil movement detector (page 12).

Referring to claim 7, Geisler discloses an apparatus comprising:

a. an eye tracking system for determining an eye-gaze direction line of a user looking at a display screen of a display device (page 2, section 2 labeled “SYSTEM OVERVIEW”, and figure 1. Note that the pointing device is the eye tracker)

b. an eye-gaze tracking module for extracting the eye-gaze direction from the eye tracking system and for determining an intersection point where the eye-gaze direction line intersects with the display screen (page 2, section 2 labeled “SYSTEM OVERVIEW”, and figure

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1. Note that the “coordinates of the foveation point” is interpreted as the intersection point where the eye-gaze direction line intersects with the display screen)

c. wherein the eye-gaze tracking module sends the intersection point data to a scalable video encoder (page 2, section 2 labeled “SYSTEM OVERVIEW”, and figure 1. Note that the unit labeled “ENCODE/TRANSMIT” in figure 1 is the scalable video encoder)

d. wherein the scalable video encoder receives a source video stream and provides an encoded first set of higher video resolution data to a remote video decoder (“DISPLAY”) and an encoded second set of lower video resolution data is provided to the remote video decoder (pages 2-3, section 2 labeled “SYSTEM OVERVIEW”, figure 1, and page 4, section 3).

Referring to claim 8 as best understood, Geisler further discloses that the encoded first set of higher video resolution data is decoded in the remote video decoder and provided to a first region of the display screen and wherein the second set of lower video resolution data is provided to a second region of the display screen (pages 2-3, section 2 labeled “SYSTEM OVERVIEW”, figure 1, and page 4, section 3).

Referring to claim 10, see the rejection of at least claim 3 above.

Referring to claims 11 and 17, see the rejection of at least claim 4 above.

Referring to claims 12 and 18, see the rejection of at least claim 5 above.

Referring to claims 14 and 15, see the rejection of at least claim 1 above.

Referring to claim 20, Geisler further discloses that the video stream is an encoded video stream (figure 1).

Referring to claim 21, Geisler further disclose that the display screen is a computer (figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 9, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the article entitled "A real-time foveated multiresolution system for low-bandwidth video communication" by Geisler et al. ("Geisler") and the article entitled "Variable-Resolution Displays for Visual Communication and Simulation" by Perry et al. ("Perry").

Referring to claim 2, Geisler further discloses that the scalable video decoder provides a MPEG video decompression algorithm (page 10), but fails to explicitly disclose a H.263 decompression algorithm. However, H.263 video decompression algorithms were exceedingly well known in the art. For example, Perry discloses a H.263 video decompression algorithm (page 422).

Geisler and Perry are both concerned with generating variable-resolution displays based on a user's eye-gaze direction. Geisler is concerned with compressing the video data in order to lower the bandwidth requirements (Geisler, page 1). Perry provides an exceedingly well known type of video decompression algorithm that was commonly used to reduce the bandwidth requirements (Perry, page 422). Therefore, it would have been obvious to combine the teachings of Geisler and Perry, in order to enhance the display system by reducing the bandwidth requirements.

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Referring to claims 9 and 16, see the rejection of at least claim 2 above.

5. Claims 6, 13, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article entitled "A real-time foveated multiresolution system for low-bandwidth video communication" by Geisler et al. ("Geisler").

Referring to claim 6, Geisler fails to explicitly disclose that the second region on the video screen is dimmer than the first region on the video screen. However, Geisler explains that the data in the second region of the video screen is degraded due to the effects of human perceptual limitations (page 1, section 1). Therefore, it would have been obvious to modify the second region of the video screen so that it is dimmer than the first region, in order to provide a second region that is visually degraded compared to the first region, thereby matching the fall-off perception characteristics of the human visual system (page 1).

Referring to claims 13 and 19, see the rejection of at least claim 6 above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Waldern et al. U.S. Patent No. 6,407,724 discloses an apparatus for varying the resolution of a display based on the eye gaze direction of a user.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 703-306-4038. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.


ck

November 20, 2003


Jon Chang
Primary Examiner